

REMARKS

Claims 2, 4, 17 and 20 have been cancelled, and claims 1, 5, 6, 10-12, and 18-19 have been amended. New claim 21 has been added. In view of the amendments made and the following remarks, reconsideration of the present application is respectfully requested.

Claims 1, 2 and 17 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

Regarding claim 1, the Examiner indicated that lines 1 and 2 were unclear as to the recitation of the "peak Ge concentration". To overcome this rejection, the reference to the "peak Ge concentration" was deleted from lines 1 and 2 and the last clause of claim 1 was amended to specify that the Ge concentration referred to is the peak Ge concentration. Lines 1 and 2 were also amended to clarify that the SiGe HBT comprises a boron-doped base region.

Meanwhile, as noted, claims 2 and 17 have been cancelled, so as to render moot the rejection of those claims based on 35 U.S.C. §112.

Of the remaining claims in the present application, claims 1 and 5-10 have been rejected under 35 U.S.C. §102(b), as being anticipated by Lanzerotti, et al., noting in particular Figs. 1a, 2a and 7a. In addition, however, the Examiner has also indicated that claims 11, 12 and 18-20 would be allowable, if amended so as to overcome the above-noted

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rejections based on 35 U.S.C. §112, and as to include all limitations of the base claim and any intervening claims. Applicants appreciate this indication of allowable subject matter. In accord with this indication of allowable subject matter, Applicants have further amended claim 1, and rewritten claim 5 in independent form, as well as claims 11 and 18.

Specifically, claim 11 now includes the recitations of claims 1 and 8, except that a preferred species, carbon, has been replaced with the general recitation of "diffusion limiting impurity". It is respectfully believed that claim 11, as amended, still recites allowable subject matter, consistent with the Examiner's indication. New claim 21, which depends from claim 11, more specifically recites that the diffusion limiting impurity is carbon, and is also believed to be allowable. Since claim 18 has also been rewritten in independent form, and includes the recitations of the base claim, and claim 19 depends from claim 18, it is also believed that claims 18-19 should be allowable.

The other independent claims, remaining in the present application, are claims 1 and 5. Starting with claim 5, that claim has been placed in independent form and as to include the recitations of both original claims 1 and 4. As such, it is respectfully submitted that claim 5 distinguishes over the Lanzerotti, et al. article. In particular, claim 5 recites a SiGe layer with a thickness of approximately 300-900 Å, and that the Ge has a peak concentration thickness of approximately 20-100 Å. As discussed in the present application, and as shown in particular in Figure 1 of the application, the invention as recited in claim 5 provides a unique profile, trapezoidal in shape, which optimizes performance and yield of a SiGe HBT.

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Such a profile is not shown in the Figs. 1a, 1b or 7a, as referred to by the Examiner, nor is it described by Lanzerotti, et al. The cited article merely shows a conventional flat profile, with a single concentration amount, i.e. 20%, used for Ge, with no teaching provided for optimization of performance and yield. Moreover, the combination of ranges, as recited in claim 5, is not taught in Lanzerotti, et al.

Similarly, claim 1, as amended, recites a unique profile, which optimizes performance and yield of a SiGe HBT. Since claim 1 now recites that the SiGe layer has a thickness that is substantially greater than a peak concentration thickness of the Ge, it also distinguishes from Lanzerotti, et al.

In summary, and in view of the amendments herein, none of the references cited by the Examiner nor any other known prior art, either alone or in combination, disclose the unique combination of features disclosed in applicant's claims presently on file. For this reason, allowance of all of Applicants' claims, i.e. claims 1, 5-12, 18, 19 and 21, is respectfully solicited.

If any fees, including extension of time fees or additional claims fees, are due as a result of this response, please charge IBM Corp. Deposit Account No. 09-0456. This

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authorization is intended to act as a constructive petition for an extension of time, should an extension of time be needed as a result of this response. The Examiner is invited to telephone the undersigned if this would in any way advance the prosecution of this case.

Respectfully submitted,

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